PRELIMINARY SERVICE MANUAL

ACT-T-720A

Aircraft

REGENCY ELECTRONICS, INC.
7707 Records Street
Indianapolis, Indiana
46226

ACT-T-720A ALIGNMENT INSTRUCTIONS

Equipment Required

Accurate 10.7 MHz Source
Signal Generator
Electronic Counter
DC Voltmeter

IF Alignment

1. Connect DC Voltmeter to the AGC line at the Junction of R106, R118 and Pin 7 of IC102. (This point is accessible at a jumper on the component side of the board). GND lead to chassis.

2. Loose couple the 10.7 MHz Source to L105.

3. Adjust L105 for maximum DC voltage. Adjust coupling to maintain 2 volt reading.

   Remove 10.7 MHz signal.

RF Alignment

1. Enter 108.000 MHz.

2. Connect DC Voltmeter to the junction of R406, R408 and Pin 7 of IC401.

3. Adjust L402 for a reading of 1.0 volts.

4. Temporarily enter 129.575 MHz. The voltage reading should be 5.5 volts.

5. Re-enter 108 MHz.

6. Use a loop to couple the frequency counter to L103.

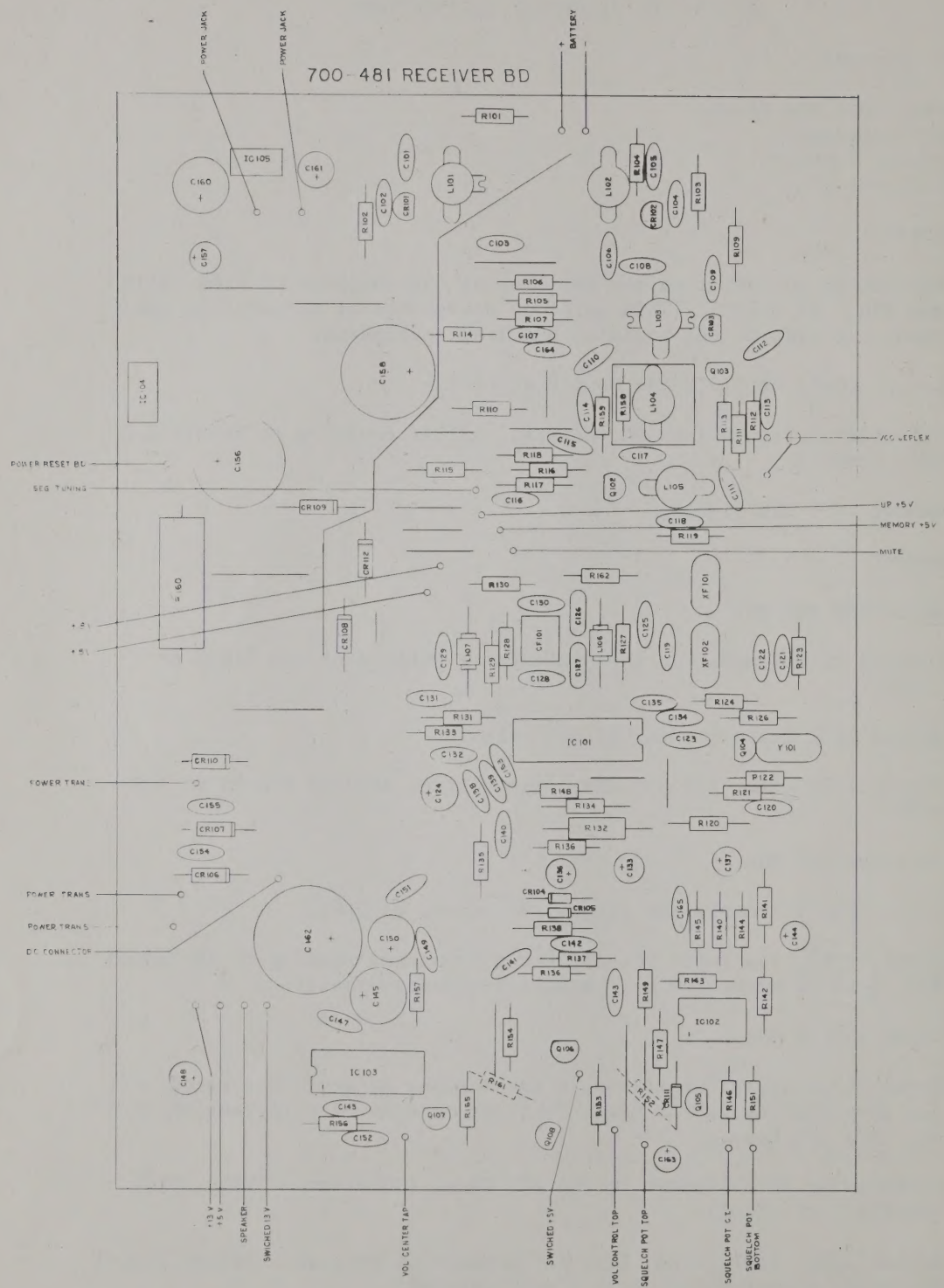
7. Adjust C203, (on logic board), for a frequency reading of 59.350000 MHz, plus or minus 500 Hz. Remove frequency counter.

8. Enter 118.55 MHz.

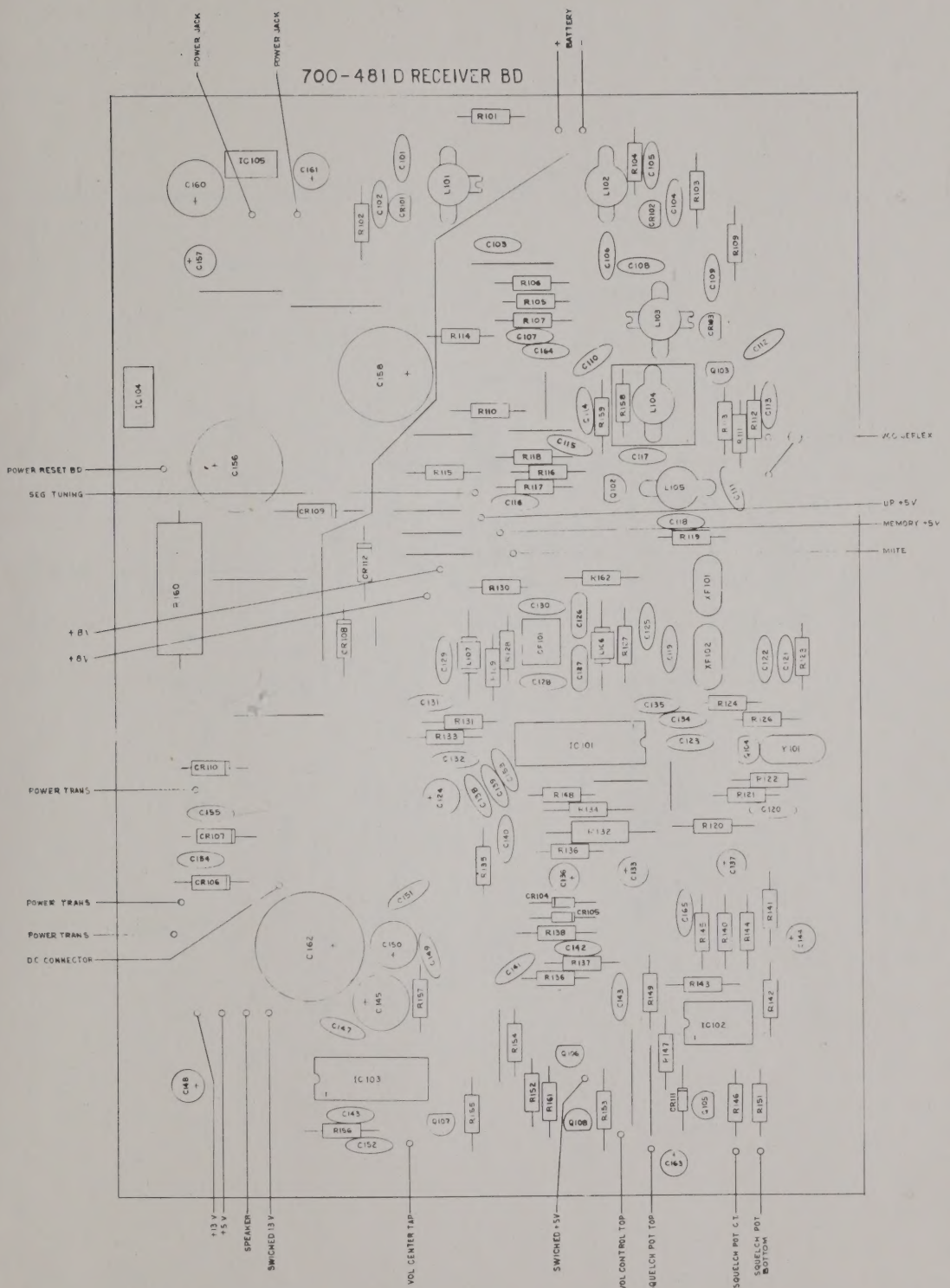
9. Connect the Signal Generator to the antenna socket. Accurately set the generator to 118.55 MHz. This may be done by zero beating with the 10.7 MHz Source.

10. Connect the DC Voltmeter to the AGC line, (Junction of R106, R118 and Pin 7 of IC102).

11. Adjust L101, L102, L103, L104 for maximum DC voltage. Adjust Signal Generator output to maintain 2 volt reading.



(EARLY MODELS)



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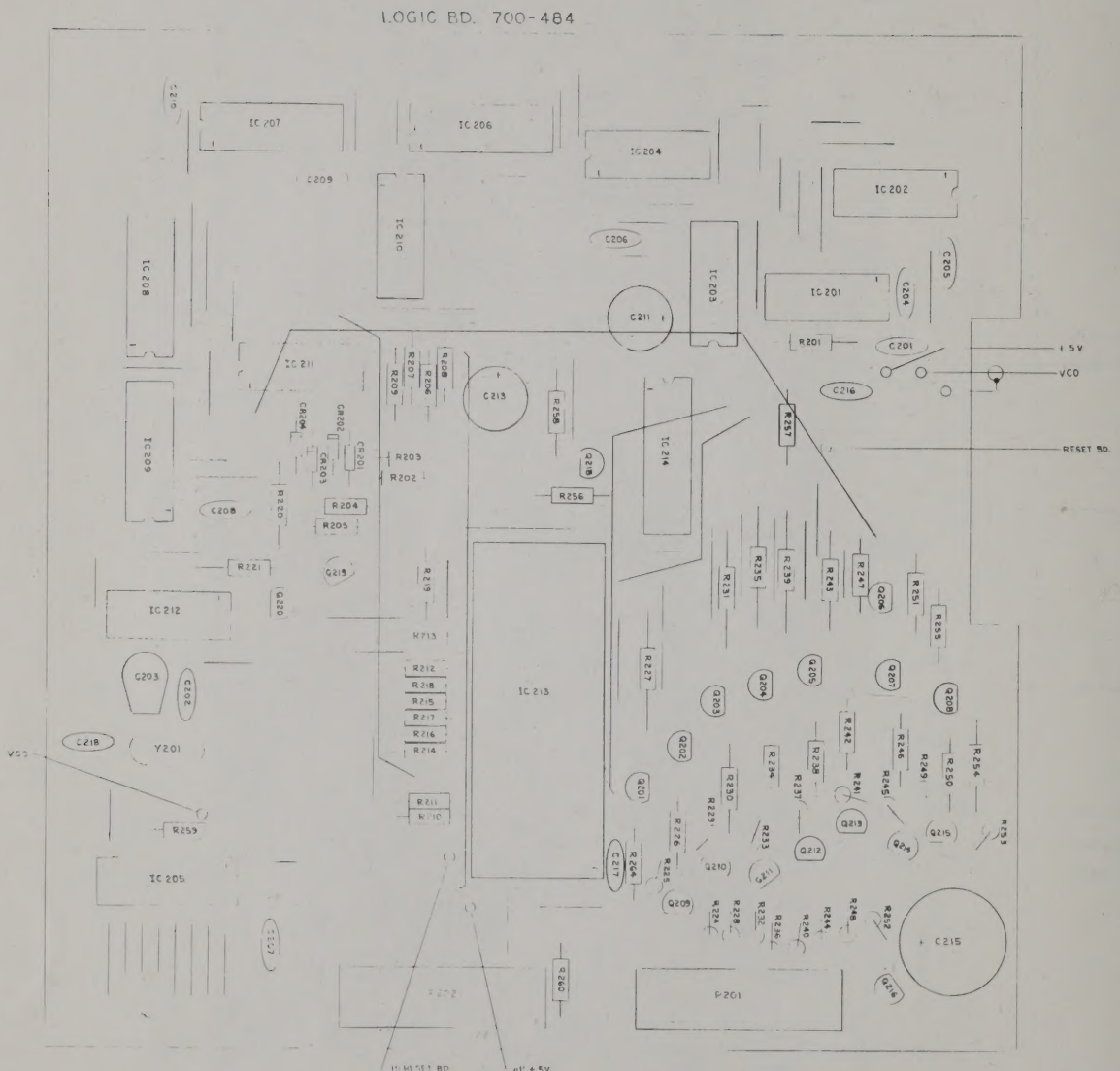
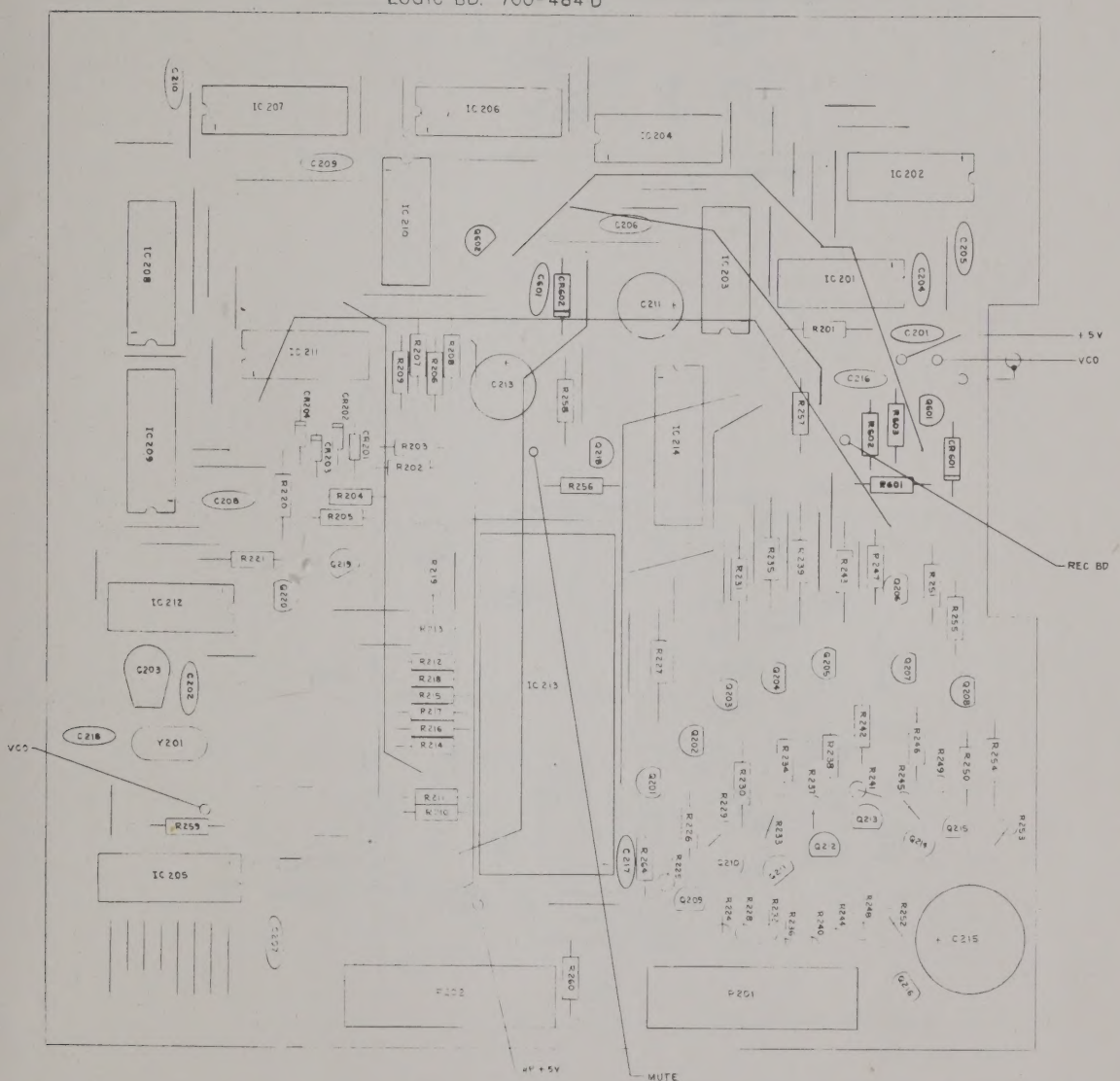


(EARLY MODELS)

LOGIC BD. 700-484 D



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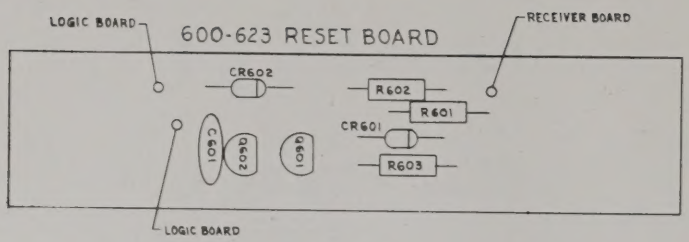
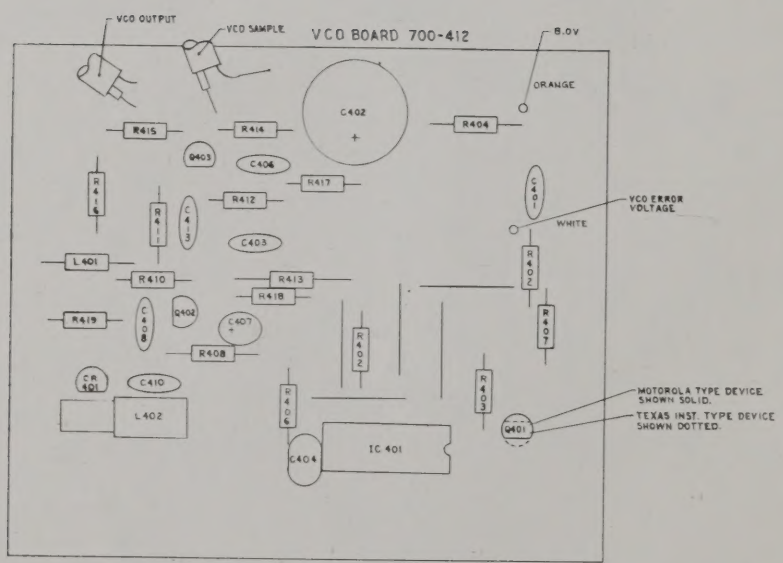
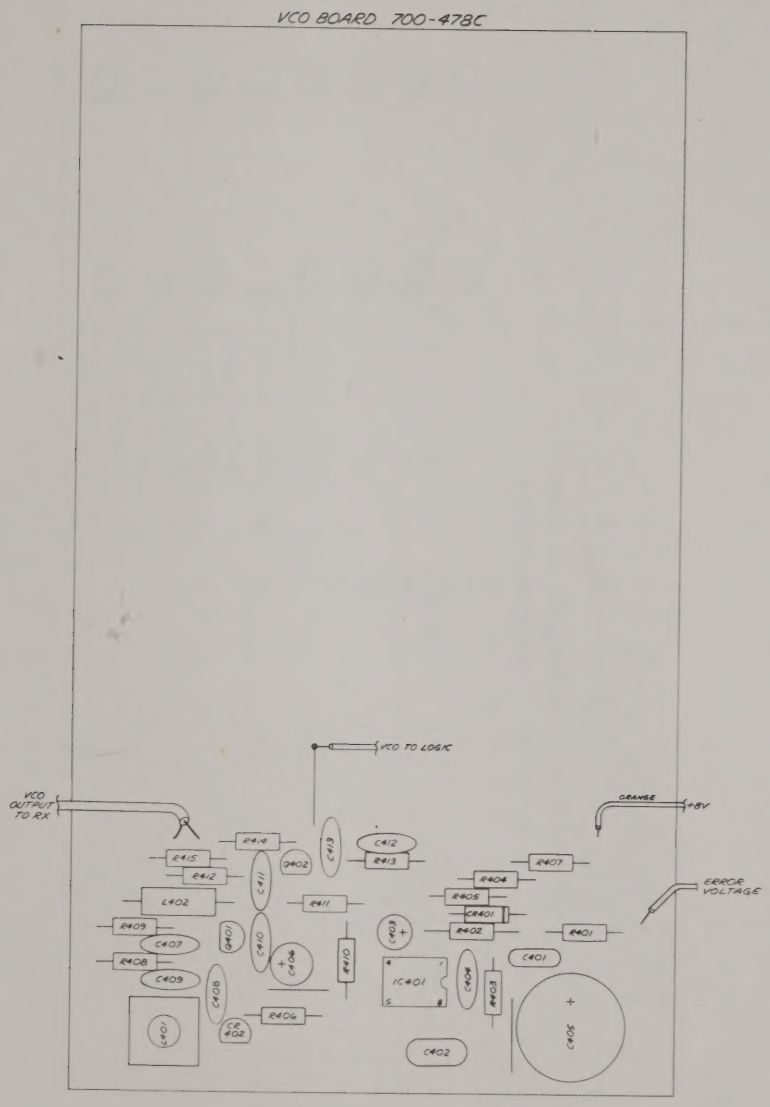


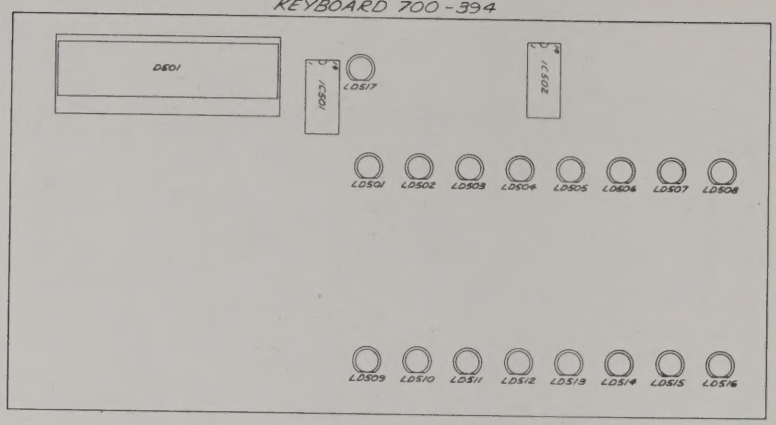


(EARLY MODELS)

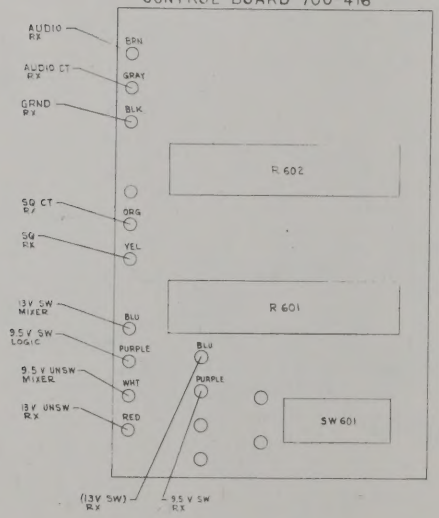


(LATER MODELS)

KEYBOARD 700-394



CONTROL BOARD 700-416



RECEIVER BOARD

Voltages taken with Digital Voltmeter Scanner on Manual, set to Channel 1, NO signal applied.

	E	B	C
Q101	4.0	3.2	2.9
Q102	4.2	3.5	0
Q103	3.3	2.9	0
Q104	4.6	4.4	7.7
Q105	0	0	4.9 (unsquelched)
	0	.70	.04 (tite squelch)
Q106	4.9	4.9	0 (unsquelched)
	4.9	4.1	4.8 (tite squelch)
Q107	0	0	0 (unsquelched)
	0	.85	.04 (tite squelch)
Q108	0	0	0 (unsquelched)
	0	.85	.04 (tite squelch)
Q109	2.9	3.3	.24

IC101	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1.0	1.4	5.8	0.7	0	5.7	1.4	1.4	0.8	5.9	.65	0.5	3.5	0.7	2.8	5.5

IC102	1	2	3	4	5	6	7	8	
	0	0.8	0.6	0	2.2	3.3	0.7	7.9	(unsquelched)
	6.5	0.8	1.7	0	2.2	3.3	0.7	7.9	(tite squelch)

IC103	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	8.2	0.1	0	0	0	0.1	0	7.9	0	0	0	0	0	16

IC104	1	2	3
	13	0	5.0

IC105	1	2	3
	16	0	8.0

LOGIC BOARD

	E	B	C
Q201	0	0.2	3.6
Q202	0	0.2	3.6
Q203	0	0.2	3.8
Q204	0	0.1	4.0
Q205	0	0.1	4.0
Q206	0	0.1	4.3
Q207	0	0.2	3.8
Q208	0	0.1	4.1
Q209	4.5	4.3	2.1
Q210	4.5	4.3	2.1
Q211	4.5	4.3	2.0
Q212	4.5	4.0	3.3
Q213	4.5	4.35	1.8
Q214	4.5	4.5	2.9
Q215	4.5	4.4	2.0
Q216	4.5	4.4	1.8
Q218	0	0.1	5.0
Q219	0	0.7	4.85
Q220	0	0	0

IC201	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	2.5	3.8	3.8	2.2	1.7	1.9	0	1.3	1.3	2.2	1.7	1.7	2.4	4.9		
IC202	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	3.7	3.7	0	3.7	3.7	.25	0	4.0	0.3	1.8	0	1.8	1.0	4.9		
IC203	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	2.4	4.0	4.0	2.2	1.7	2.0	0	1.8	1.8	2.3	1.7	1.7	2.2	4.9		
IC204	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	1.7	1.8	1.7	4.9	1.7	1.9	1.9	1.9	1.7	1.8	0	1.9	1.8	1.8		
IC205	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.9	4.3	2.6	2.6	1.0	4.8	0	0	0	4.9	4.9	4.9	0	0	0	0
IC206	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.9	3.7	3.7	3.6	3.6	3.6	4.9	4.3	0	0.3	0.1	4.2	4.2	4.2	2.0	4.9

LOGIC BOARD (Continued)

IC207	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.9	0.4	2.6	2.4	2.4	2.2	4.9	4.3	0	4.9	4.0	4.0	4.1	0.2	2.0	4.9
IC208	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.9	0.4	2.0	2.0	2.0	2.3	4.9	4.3	0	0.4	4.9	0.2	4.2	0.2	2.0	4.9
IC209	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	4.9	2.0	0	4.9	4.9	4.9	0.4	0	4.3	0.4	3.6	3.6	3.6	2.8	0.2	4.9
IC210	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	0.2	0.2	4.1	4.1	4.1	0.2	0	0.1	4.9	0.2	4.2	4.2	4.2	4.9		
IC211	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	0.2	0.2	0.2	0.2	5.5	5.5	0	0.1	4.9	0.2	4.2	4.2	4.2	4.9		
IC212	1	2	3	4	5	6	7	8	9	10	11	12	13	14		
	0	0	4.3	0.3	2.2	4.3	0	4.3	0	0	4.3	0	0	4.9		

IC213	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	0	1.9	0.1	0.1	0.1	0.1	4.9	0.2	0.7	0.9	0.9	2.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	0	4.9	4.9	4.9	4.9	0.1	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.1	4.9	1.7	0.1	4.5	4.9	4.9

IC214	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	0.1	0.1	0.1	0.1	0.1	0.2	0.7	0.9	0	0.8	2.5	0.5	0.5	0.4	4.9	0.1	4.9	4.9

FRONT PANEL

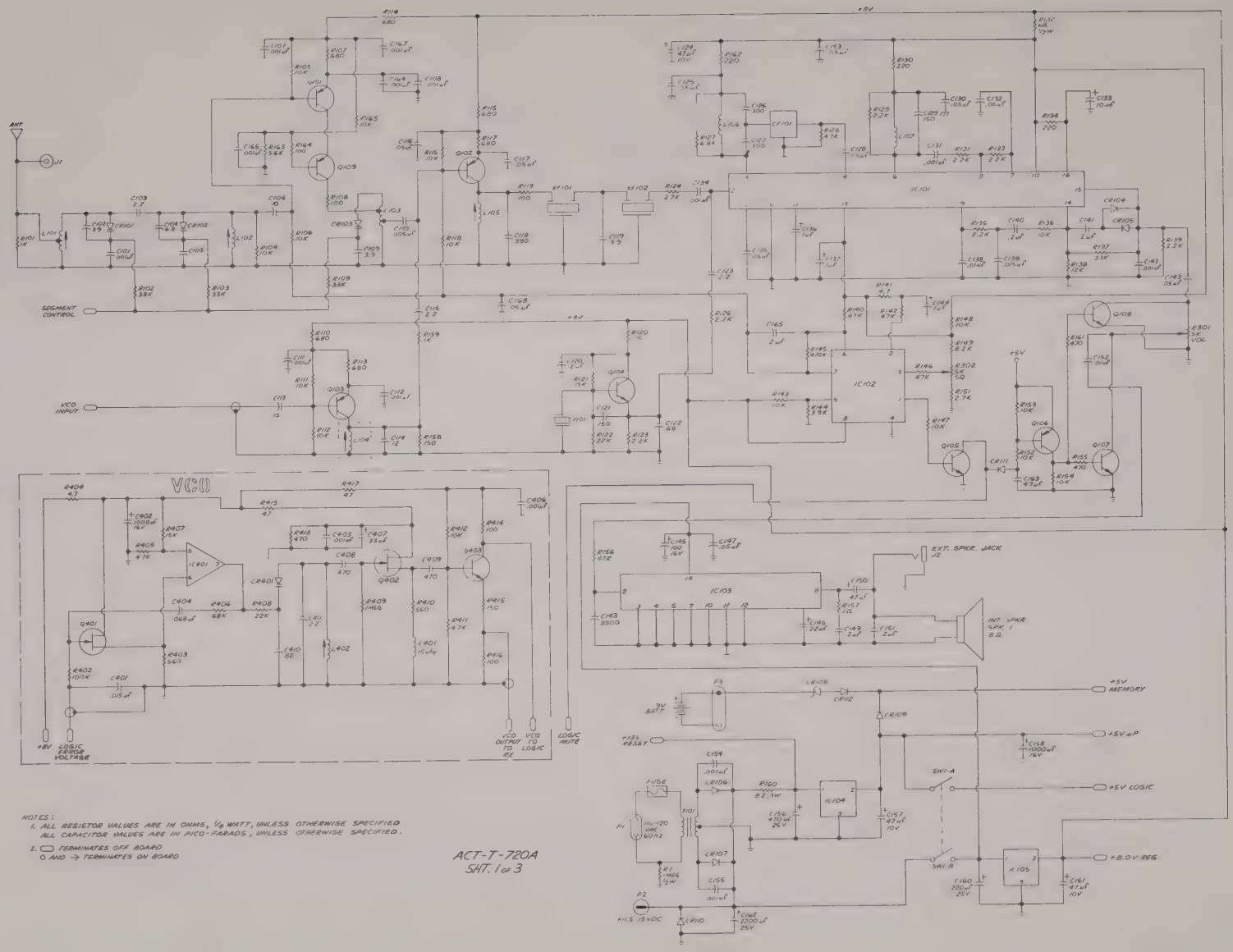
IC501	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	1.7	1.7	0.3	0.1	0.3	1.7	1.0	0.1	1.7	0.3	4.5	0.3	1.7	0.3
IC502	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	1.7	1.8	0.3	0.1	0.1	2.6	1.7	0.1	2.5	0.1	4.5	1.7	1.2	0.2

VCO BOARD

Q401	E(S)	B(G)	C(D)
	1.8	0	7.7

Q402	E(S)	B(G)	C(D)
	2.0	2.2	6.7

IC401	1	2	3	4	5	6	7	8
	0.1	1.0	1.0	0	0.1	3.2	7.7	4.0



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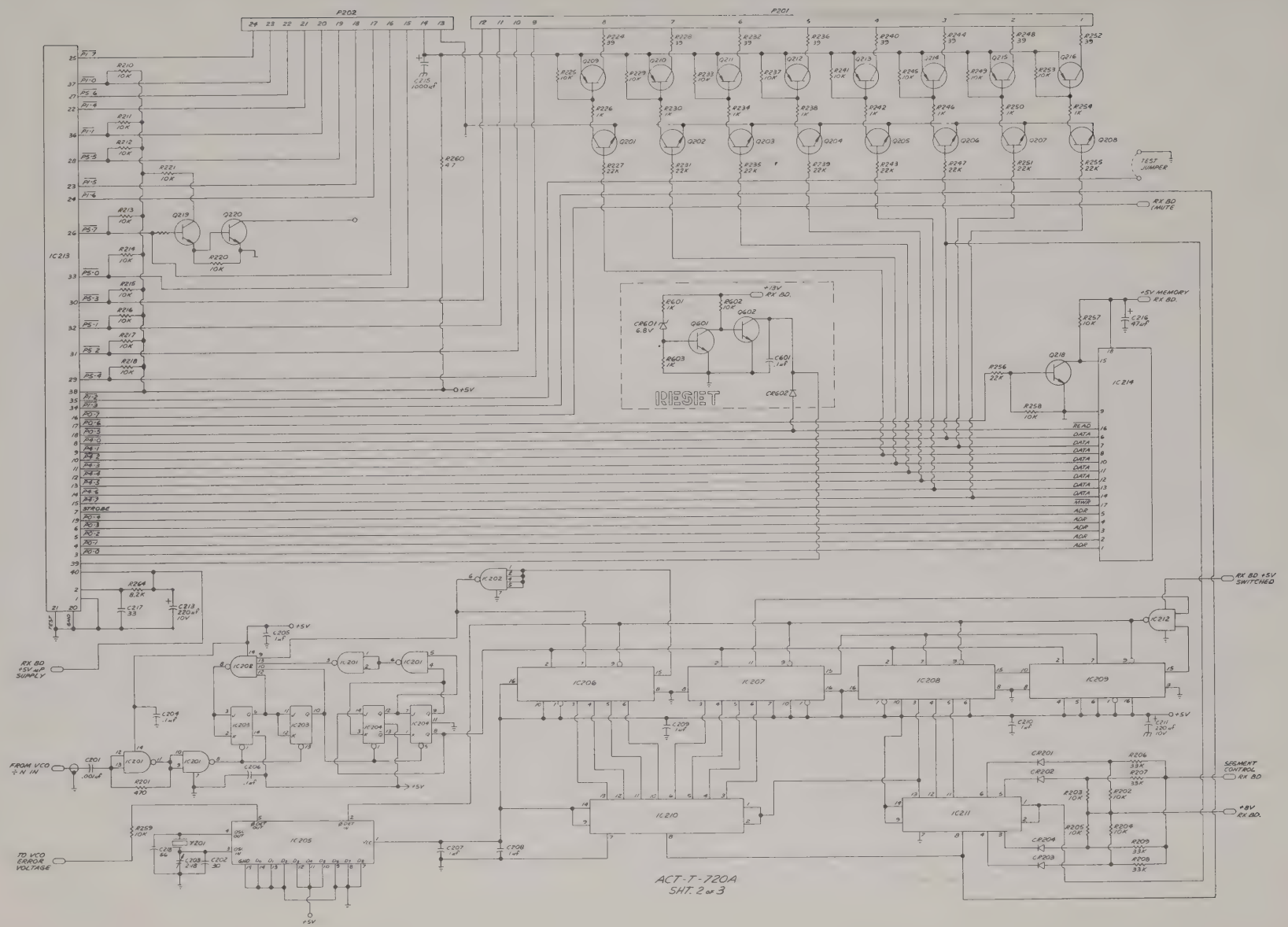
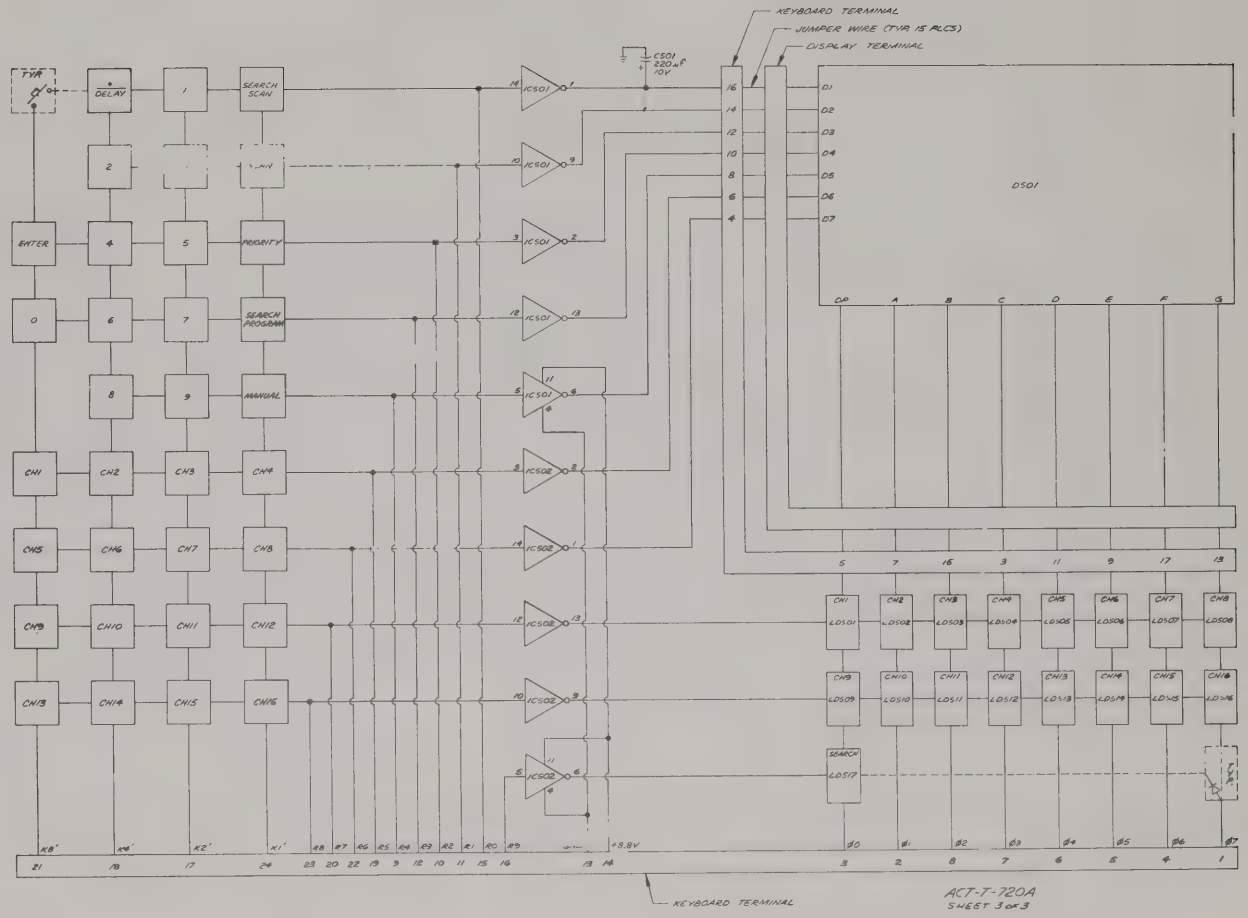
SHT. 1 OF 3


P202
P201
IC213
IC214
Q201
Q202
Q203
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q213
Q214
Q215
Q216
Q218
Q219
Q220
Q601
Q602
CR601 6.8V
CR602
IC201
IC202
IC203
IC204
IC205
IC206
IC207
IC208
IC209
IC210
IC211
IC212
Y201
TEST JUMPER
RX BD (MUTE
+5V MEMORY RX BD.
+3V RX BD.
+5V
RESET
READ
DATA
STRB
ADR
STROBE
RX BD +5V SWITCHED
RX BD +5V μP SUPPLY
FROM VCO ÷ N IN
TO VCO ERROR VOLTAGE
SEGMENT CONTROL RX BD
+8V RX BD.
ACT-T-720A
SHT. 2 of 3



ACT-T-720A
SHEET 3 OF 3

ACT-T-720A PARTS LIST

RECEIVER BOARD

TRANSISTORS

Item No.	Description	Part No.
Q101	PNP	4801-0000-026
Q102	PNP	4801-0000-026
Q103	PNP	4801-0000-026
Q104, Q105, Q108	NPN	4801-0000-010
Q106	PNP	4801-0000-060

INTEGRATED CIRCUITS

IC101	IF	3130-3193-512
IC102	Squelch-AGC	3130-3167-909
IC103	Audio	3130-3157-614
IC104	Regulator 5V	3130-0000-022
IC105	Regulator 8V	3130-0000-020

DIODES

CR101, CR102, CR103	Varactor	4809-0000-004
CR104, CR105	Silicon, Signal	4805-1241-200
CR106, CR107, CR110	Silicon, Rect.	4806-0000-004
CR108	Zener, 4.3V, 5%	4808-0000-039
CR109, CR112	Germanium, Signal	4807-1233-900

COILS

L101	Ant, Primary, Violet	1800-3152-007
L102	Ant, Secondary, White	1800-3152-009
L103	RF, Yellow	1800-3152-014
L104	Buffer, Red	1800-3152-002
L105	IF, White	1800-3191-401
L106, L107	RF Choke, 820 uhy	1803-3238-600

CRYSTALS AND FILTERS

Y101	Crystal, 10.245 MHz	2301-3151-601
XF101, XF102	Filter, Crystal, 10.7 MHz	2795-3232-200
CF101	Filter, Ceramic, 455 KHz	2700-3262-800

LOGIC BOARD

Item No.		Part No.
TRANSISTORS		
Q201, Q202, Q203, Q206, Q207, Q208, Q218, Q219, Q220	NPN	4801-0000-010
Q209, Q210, Q211, Q212, Q214, Q215, Q216	PNP	4801-0000-060
DIODES		
CR201, CR202 CR203, CR204	Silicon, Signal	4805-1241-200
INTEGRATED CIRCUITS		
IC201	Logic	3130-3157-612
IC202	Logic	3130-3157-643
IC203	Logic	3130-3157-613
IC204	Logic	3130-3157-634
IC205	Logic	3130-6059-600
IC206, IC207, IC208, IC209, IC210, IC211	Logic	3130-3157-636
IC212	Logic	3130-3157-631
IC213	Processor	3130-6060-303
IC214	RAM	3130-3281-601
CRYSTAL		
Y201	11.2 MHz	2338-3283-201
CAPACITOR		
C203	Trimmer, 2-18 PF	1517-0000-001

VCO BOARD

Item No.	Description	Part No.
	TRANSISTORS	
Q401	FET	4811-0000-020
Q402	NPN	4801-0000-035
	INTEGRATED CIRCUIT	
IC401	OP Amp	3130-3167-914
	DIODES	
CR401	Varactor	4809-0000-001
CR402	Silicon	4805-1241-201
	COILS	
L401	RF Choke, 15 uhy	1803-3268-209
L402	Oscillator	1800-5149-701

RESET BOARD

Item No.	Description	Part No.
	TRANSISTORS	
Q601	NPN	4801-0000-010
Q602	NPN	4801-0000-010
	DIODES	
CR601	Zener, 6V	4808-0000-025
CR602	Silicon	4805-1241-200

KEYBOARD

Item No.	Description	Part No.
D501	Display, 7 Digit, LED	2000-5141-000
IC501, 502	Display Driver	3130-3157-630
LD501 Thru LD517	Light Emitting Diode, Red	4810-1282-903

CONTROL BOARD

Description	Part No.
Control, Volume	4752-5135-301
Control, Squelch	4752-5135-302
Switch, ON-OFF	5113-5136-001

MISCELLANEOUS

Description	Part No.
Power Transformer	5604-5142-400
Feedthru CAP., .001 uf (7 used)	1521-5129-800
Knob	2402-5136-600
Wrap Assembly	7011-1205-100
Bumper, Rubber	1401-0000-003
Speaker, 8 Ohm, 2W	1301-3273-200